STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING FORM 3 AMENDED REPORT						′							
	APPLICATION FOR PERMIT TO DRILL								1. WELL NAME and NUMBER GORDON CREEK ST NE-7-14-8				
2. TYPE OF		NEW WELL	REENTER P8	A WELL DEF	PEN WEL				3. FIELD	OR WILDCA	AT JNDESIGNATE	D	
4. TYPE OF		Gas W		ed Methane Well: NO					5. UNIT		ITIZATION A		NT NAME
6. NAME OF	FOPERATOR	Gas W	GORDON CF						7. OPER	ATOR PHON	E 403 453-1608	,	
8. ADDRES	S OF OPERATOR			, , , , , , , , , , , , , , , , , , ,					9. OPER	ATOR E-MAI	L		
	AL LEASE NUMB	BER	79 E Main #345,	Price, UT, 84501 11. MINERAL OW	NERSHIP)			12. SUR	FACE OWNE	_		
		6537	16 10	FEDERAL I	NDIAN 🦲	STATE (9)	FEE 💮	FEDERA			ATE (FEE ()
	OF SURFACE OW	State	of Utah Division	of Wildlife Resources	S						R PHONE (if I 801-538-4866	5	·
15. ADDRES	SS OF SURFACE			110, Salt Lake City, l						there	R E-MAIL (if esemeyer@uta		'tee')
	N ALLOTTEE OR = 'INDIAN')	TRIBE NAME		18. INTEND TO CO	ATIONS				19. SLAI		_		_
				YES (Submi	t Commin	gling Applicat	ion)	NO 🚇	VERTICA	L (📵) DIRE	CTIONAL ()	HORIZ	ONTAL 🔵
	TON OF WELL			OTAGES	+	TR-QTR		SECTION	-	VNSHIP	RANGE	'	MERIDIAN
	I AT SURFACE			NL 543 FEL SEN		SENE		7	-	4.0 S	8.0 E		S
	permost Produc	ing Zone		NL 543 FEL	-	SENE SENE		7	-	4.0 S	8.0 E	-	S
At Total D	<u> </u>		2081 F	2081 FNL 543 FEL			- /-	7	14.0 S 8.0 E				S
21. COUNT		RBON		22. DISTANCE TO	5	43			23. NUM	BER OF ACK	160	ING UNI	·
25. DISTANCE TO NEARES (Applied For Drilling or C					ing or Co		AME	POOL	26. PROPOSED DEPTH MD: 3669 TVD: 3669				
27. ELEVAT	TION - GROUND	LEVEL 7237		28. BOND NUMBE		010790			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE 91-5193				
				Hole, Casin									
String SURF	Hole Size	Casing Siz 8.625	e Length 0 - 450			55 ST&C	+	Max Mud 8.7	Wt.	Cement Class G	Sacks 212	Yield 1.42	Weight 15.8
PROD	7.875	5.5	0 - 366		N-	-80 LT&C	士	10.0	1	Class G	319	2.69	10.7
					ATTACH	HMENTS							
	VERIFY THE	FOLLOWING	ARE ATTACH	ED IN ACCORDA	ANCE W	ITH THE UT	ТАН	OIL AND G	AS CON	ISERVATIO	ON GENERA	L RULES	5
W EL	L PLAT OR MAP	PREPARED BY	LICENSED SUR	VEYOR OR ENGINE	EER	€ сом	IPLET	E DRILLING	PLAN				
AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)						FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER							
DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY TOPOGRAPHICAL MAP													
NAME Barr	ry Brumwell		TITLE V	ice President-Operat	tions			PHONE 403	453-160	3			
SIGNATUR	RE		DATE 0	9/19/2011				EMAIL bbru	mwell@th	nunderbirdene	ergy.com		
API NUMBER ASSIGNED APPROVAL 43007502410000								Permit N	Manager	l			

DRILLING PLAN and PROGRAM

Attached to UDOGM Form 3

GORDON CREEK, LLC.

NE-7-14-8

2080.53' FNL & 542.53' FEL SE/4 of NE/4 of Section 7-14S-8E Carbon County, Utah

** NOTE: AN APD FOR THIS WELL WAS APPLIED FOR AND APPROVED ON APRIL 19th, 2007 AND GRANTED AN API # OF 43-007-31231. THE LOCATION WAS CONSTRUCTED BUT THE WELL WAS NEVER DRILLED AND THAT APPLICATION HAS EXPIRED. <u>THIS APPLICATION IS AN UPDATE TO THE EXPIRED APPLICATION</u>.

1. SURFACE GEOLOGIC FORMATION

Emery Sandstone Member of the Mancos Shale

2. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

Mancos Blue Gate Shale top:

1,295' KB

Lower Blue Gate Bentonite Marker:

3,064' KB

Ferron SS:

3,199' KB

3. PROJECTED GAS & H₂0 ZONES

While no groundwater is expected to be encountered, groundwater *may* be encountered within the Emery Sandstone Member of the Mancos Shale. Any water encountered will be reported on a Form 7 "Report of Water Encountered During Drilling". All indications of usable water will be reported.

Casing & cementing will be done to protect potentially productive hydrocarbons, lost circulation zones, abnormal pressure zones and prospectively valuable mineral deposits.

Surface casing will be tested to 500 psi and the Production casing will be tested to 1,500 psi, with a minimum of 1 psi/ft of the last casing string setting depth.

4. PROPOSED CASING AND CEMENTING PROGRAMS

Refer to EXHIBIT "A" for casing design information

A. CASING PROGRAM

HOLE SIZE (in)	CASING SIZE (in)	WEIGHT (#/ft)	GRADE	JOINT	DEPTH SET (ft)
17	12 ³ / ₄	40.5	H-40	ST&C	0 – 40
11	8 ⁵ / ₈	24.00	J-55	ST&C	0 – 450
7 7/8	5 1/2	17.00	N-80	LT&C	0 – 3,669

B. CEMENTING PROGRAM

The 8 $^5/_8$ " surface casing will be set and cemented full length with approximately 212 sacks of 0-1-0 Class "G" cement + 2% CaCl₂ + 0.25 #/sk of cellophane flakes mixed at 15.84 ppg (yield = 1.142 ft³/sk); volume based on nominal hole size + 100% excess. The cement will be circulated back to surface. In the event that the cement is not circulated back to surface, a 1" top out job will be performed with 0-1-0 Class "G" cement + 2% CaCl₂ + 0.25 #/sk of cellophane flakes mixed at 15.84 ppg (yield = 1.142 ft³/sk).

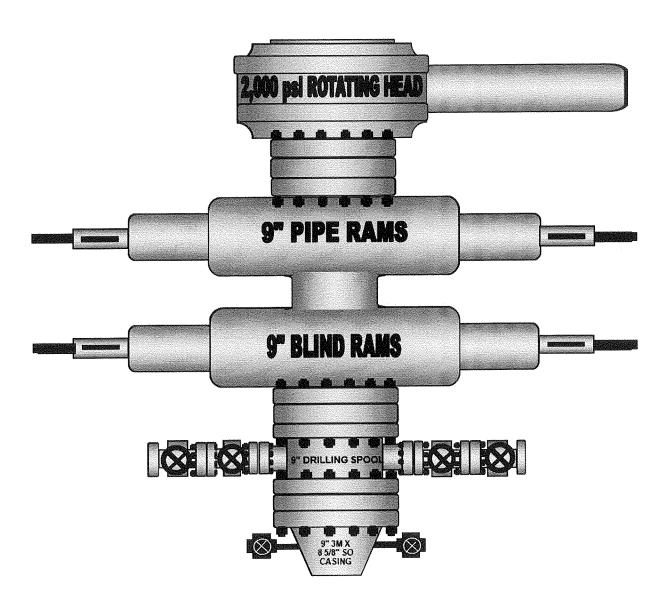
The 5 ½" production casing will be set and cemented full length using 319 sx of 0-1-0 "G" Light Weight cement incorporating 42% "SuperBall" centrospheres to lighten the cement density + 3% NaCl, 0.3% Air-out, 1.5% SFI-300, 0.2% SCR-2. The cement will be mixed at 10.7 ppg (yield = 2.69 ft3/sk); volume based on nominal hole size + 35% excess. The cement will be circulated back to surface.

THE FOLLOWING SHALL BE ENTERED INTO THE DRILLER'S LOG:

- 1. Blowout preventer pressure tests, including test pressures and results;
- II. Blowout preventer tests for proper functioning;
- III. Blowout prevention drills conducted;
- IV. Casing run, including size, grade, weight, and depth set;
- V. How the pipe was cemented, including amount of cement, type, whether cement was circulated back to surface, location of the cementing tools, etc.;
- VI. Waiting on cement time for each casing string;
- VII. Casing pressure tests after cementing, including test pressures and results.

5. THE OPERATOR'S MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL

Below is a schematic diagram of the blowout preventer equipment requirements for this drilling operation. A 9' X 3,000 psi double gate BOP will be used with a 2,000 psi Rotating Head utilized for air drilling operations. ALL BOPE will be pressure tested to the required operating pressures of each component. All tests will be recorded in the Driller's Report Book. The physical operation of each component of the BOP's will be checked on each trip.



6. THE TYPE AND CHARACTERISTICS OF THE PROPOSED CIRCULATING FLUIDS / MUDS

0' - 450' 11" Surface Hole Drill with air, will mud-up if necessary. 450' – TMD $7^{7}/_{8}$ " Main Hole Drill with air, 500 psi @ 1500-2300 ft³/min

Will "mud up" at Total Depth to run logs and casing. Will mud up sooner if hole conditions dictate. It is anticipated that drilling fluid densities of 8.3 - 8.7 #/gal will be utilized when "mudded up".

7. THE TESTING, LOGGING AND CORING PROGRAMS

Open hole logs consisting of a CNL-LDT-GR-GAL will be run from above the Blue Gate Shale to TMD. A DIL-GR-SP log will be run from TMD to surface.

ANY ANTICIPATED ABNORMAL PRESSURES or TEMPURATURES

No abnormal pressures or temperatures have been noted or reported in wells drilled in the area nor at the depths anticipated in this well. Bottom hole pressure expected is approximately 1250 psi maximum. No hydrogen sulfide or other hazardous gases or fluids have been found, reported or are known to exist at these depths in the area.

8. ANTICIPATED STARTING DATE AND DURATION OF THE OPERATIONS

The well will be drilled between late September and the end of November, 2011. Verbal and/or written notifications listed below shall be submitted in accordance with instructions from the Division of Oil, Gas & Mining:

- a) prior to beginning construction;
- b) prior to spudding;
- c) prior to running any casing or BOP tests;
- d) prior to plugging the well, for verbal plugging instructions.

Spills, blowouts, fires, leaks, accidents or other unusual occurrences shall IMMEDIATELY be reported to the Division of Oil, Gas & Mining.

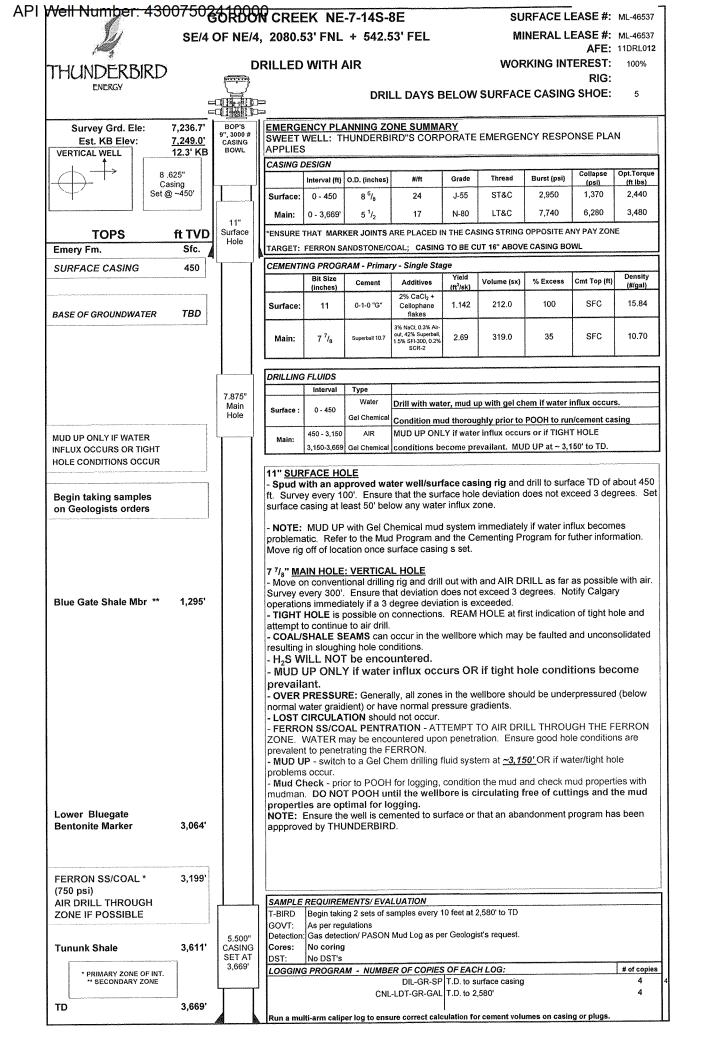


EXHIBIT "A"

CASING DESIGN GORDON CREEK ST NE-7-14-8 PROJECTED TD: 3,669' KB

SURFACE CASING (0' - 450')

Diameter 8 5/8"

Interval 450' to Surface

Weight 24 #/ft
Grade J-55
Coupling ST&C

Burst Design

The recommended practice is to base on the burst rating of the casing string in psi to be at least numerically equal to 0.225 psi/ft times the setting depth in feet of the next casing string. The rating chosen was also intended to match the BOPE pressure rating and exceed the highest possible surface pressure of approximately 825 psig.

Burst required = 0.225 x 3,669 825 psig

Burst rating of casing string: 2,950 psi

Safety factor = 2,950 psi / 825 psi = 3.58

Collapse Design

Collapse pressure is negligible on this surface string.

Tension Design

String weight in air 10,800 #
Tensile strength of joint 244,000 lbf
Safety factor of joint 22.6

PRODUCTION CASING (0'-3,669')

Diameter 5 ½"

Interval 3,669' to surface

Weight 17 #/ft
Grade N-80
Coupling LT&C

Burst Design

An internal pressure gradient of 0.4863 psi/ft has been used as a basis for these calculations.

Burst rating of casing string: 7,740 psi

Burst rating required: 3,669' X 0.4863 = 1,784 psig

Safety factor = 7,740 psi / 1,784 psi = 4.33

Tension Design

1.6 Safety factor of top joint, neglecting buoyancy and without over pull.

Tensile rating of casing joint: 348,000 lbf

String Weight: $3,669' \times 17 \#/ft = 62,373 \ lbf$ **Safety factor =** $348,000 \ lbf / 62,373 \ lbf = 5.58$

Collapse Design

Maximum anticipated mud weight is 10.0 ppg based on a mud gradient of 0.53 psi/ft.

Collapse rating of csg string: 6,280 psi

Collapse rating required: $3,669' \times 0.53 \text{ psi/ft} = 1,945 \text{ psi}$ Safety factor = 6,280 psi / 1,945 psi = 3.23

Production Casing Design

Interval	Weight	•		S.F.	S.F.
(ft)	(#/ft)			Collapse	Tension
3,669' – 0'	17	N-80	4.33	5.58	3.23

MULTI-POINT SURFACE USE PLAN

Attached to UDOGM Form 3

GORDON CREEK, LLC.

NE-7-14-8

2080.53' FNL & 542.53' FEL SE/4 of NE/4 of Section 7-14S-8E Carbon County, Utah

1. EXISTING ROADS

- a. We do not plan to change, alter or improve upon ANY existing State or County roads.
- b. Existing roads will be maintained in the same or better condition.

2. PLANNED ACCESS

- a. No new access is required, as this well was previously permitted and the access and location were built in accordance with that permit. The current route will be re-conditioned to ensure adequate access.
- b. If the well is productive, the road will be maintained as necessary to prevent soil erosion and maintain year-round traffic. However, we may allow the access road to be gated and closed off during winter production operations and access the site with a snowmobile or other winter ATV.
- c. Maximum Width: 24' travel surface with 27' base.
- d. Maximum grade: 25%
- e. Road culverts may be required. Surface water will be diverted around the well pad as necessary.
- f. Any power lines and / or pipelines to/from the well will follow the proposed access route.

3. LOCATION OF EXISTING WELLS

a. As shown on the Civil Location Survey Plat for the well.

4. LOCATION OF EXISTING and/or PROPOSED FACILITIES

- a. If the well is a producer, installation of required production facilities will follow the drilling and completion phase of well operations. Buried flow lines, water lines and electrical cable will follow the proposed access road and other existing access ROWs to the intersection with Thunderbird's main 12' pipeline corridor.
- b. Rehabilitation of all pad areas not used for production facilities will be made in accordance with landowner stipulations.

5. LOCATION AND TYPE OF WATER SUPPLY

- a. All water to be used for drilling operations will be obtained from area water wells drilled and owned by Gordon Creek, LLC.
- b. Water will be transported to location by truck over approved access roads.

6. SOURCE OF CONSTRUCTION MATERIALS

- a. Any necessary construction materials needed will be obtained locally from a private source and hauled to the location on existing roads.
- b. No construction or surfacing materials will be taken from Federal / Indian lands.

7. METHODS FOR HANDLING WASTE DISPOSAL

- a. As the well is expected to be air drilled, a small reserve pit will be constructed with a minimum of one-half the total depth below the original ground surface on the lowest point within the pit. The pit will not be lined unless conditions encountered during construction warrant it or if deemed necessary by the DOGM Representative during pre-site inspection. Three sides of the reserve pit will be fenced within 24 hours after completion of construction and the fourth side within 24 hours after drilling operations cease with four strands of barbed wire, or woven wire topped with barbed wire to a height of not less than four feet. The fence will be kept in good repair while the pit is drying.
- b. Following drilling, the liquid waste will be evaporated from the pit and the pit backfilled and returned to natural grade. No liquid hydrocarbons will be discharged to the reserve pit or location.
- c. In the event that wellbore fluids are produced, any oil will be retained in tanks until sold and any water produced will be retained until its quality can be determined. The quality and quantity of the water will determine the method of disposal.
- d. Trash will be contained in a portable metal container and will be hauled from location periodically and disposed of at an approved disposal site. Chemical toilets will be placed on location and sewage will be disposed of at an appropriate disposal site.

8. ANCILLARY FACILITIES

a. We anticipate no need for ancillary facilities with the exception of a trailer to be located on the drill site.

9. WELLSITE LAYOUT

- a. Gordon Creek, LLC. has reduced to surface lease size (area stripped and levelled) for this location to the smallest lease size possible to accommodate the required drilling rig and support equipment.
- b. Any available topsoil will be removed from the location and stockpiled. The location of the rig, mud tanks, reserve and berm pits and all other drilling support equipment will be located as per common oilfield rig layouts.
- b. A blooie pit will be located 100' from the drill hole. A line will be placed on the surface from the center hole to the blooie pit. The blooie pit will not be lined, but will be fenced on four sides to protect livestock/wildlife.
- c. Access to the well pad will be as shown on the Civil Location Survey Plat for the well.
- d. Natural runoff will be diverted around the well pad.

10. PLANS FOR RESTORATION OF SURFACE

- a. All surface areas not required for producing operations will be graded to as near original condition as possible and contoured to minimize possible erosion.
- b. Available topsoil will be stockpiled and will be evenly distributed over the disturbed areas and the area will be reseeded as prescribed by the landowner.
- c. Pits and any other area that would present a hazard to wildlife or livestock will be fenced off when the rig is released and removed.
- d. Rehabilitation will commence following completion of the well. Rat and mouse holes will be filled in immediately upon release of the drilling rig from the location. If the well site is to be abandoned, all disturbed areas will be re-contoured to the natural terrain found prior to location construction.

11. SURFACE OWNERSHIP

a. The well site and access road are on and across lands originally owned through the State of Utah School and Institutional Trust Lands Administration and covered by Surface Use Agreement # ML-46537. *Under this Surface Use Agreement AND the original APD Approval, this well location and access road were constructed and remain in a rig-ready state.* Since the expiration of the original APD for this well, ownership of these lands have since been transferred to the State of Utah Department of Natural Resources, Division of Wildlife Resources, 1594 W. North Temple, Suite 2110, P.O. Box 146301, Salt Lake City, Utah, 84114-6301. The operator shall contact the landowner and the Division of Oil, Gas and Mining 48 hours prior to beginning construction activities.

12. OTHER INFORMATION

- a. The primary surface use is wildlife habitat. The nearest dwelling is approximately 12 Miles east (Price, Utah). The nearest live water is an unnamed natural spring located approximately ½ Mile East of the proposed well location.
- b. If there is snow on the ground when construction begins, it will be removed before the soil is disturbed and piled downhill from the topsoil stockpile location.
- c. The back-slope and fore-slope will be constructed no steeper than 4:1.
- d. All equipment and vehicles will be confined to the access road and well pad.
- e. A complete copy of the approved Application for Permit to Drill (APD,) including all conditions and stipulations shall be on the well-site during construction and drilling operations.

There will be no deviation from the proposed drilling and/or workover program without prior approval from the Division of Oil, Gas & Mining.

13. COMPANY REPRESENTATIVE

Barry Brumwell, C.E.T.
Vice President, Operations
Gordon Creek LLC., a wholly owned subsidiary of
Thunderbird Energy Corp.
#550, 1010 – 1st Street S.W.
Calgary, Alberta, Canada
(403) 453-1608 (office)
(403) 818-0696 (mobile)
bbrumwell@thunderbirdenergy.com

14. CERTIFICATION

I hereby certify that I, or persons under my direct supervision have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed by Gordon Creek, LLC. and its subcontractors in conformity with this plan and the terms and conditions under which it is approved.

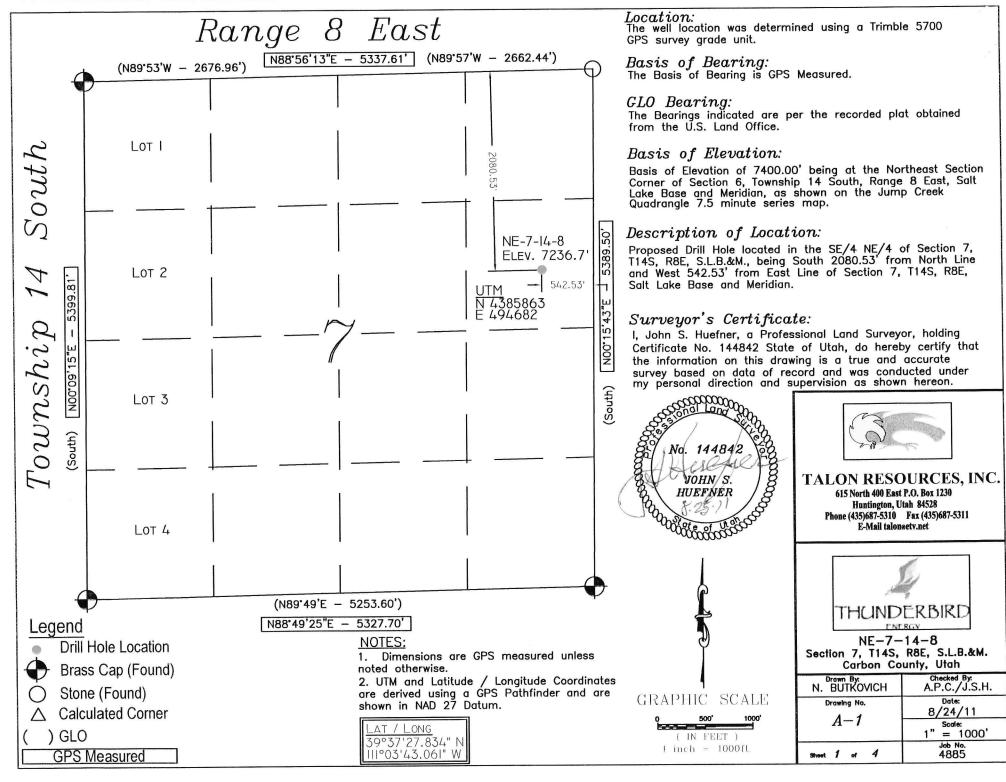
<u>9| 19|201</u> DATE

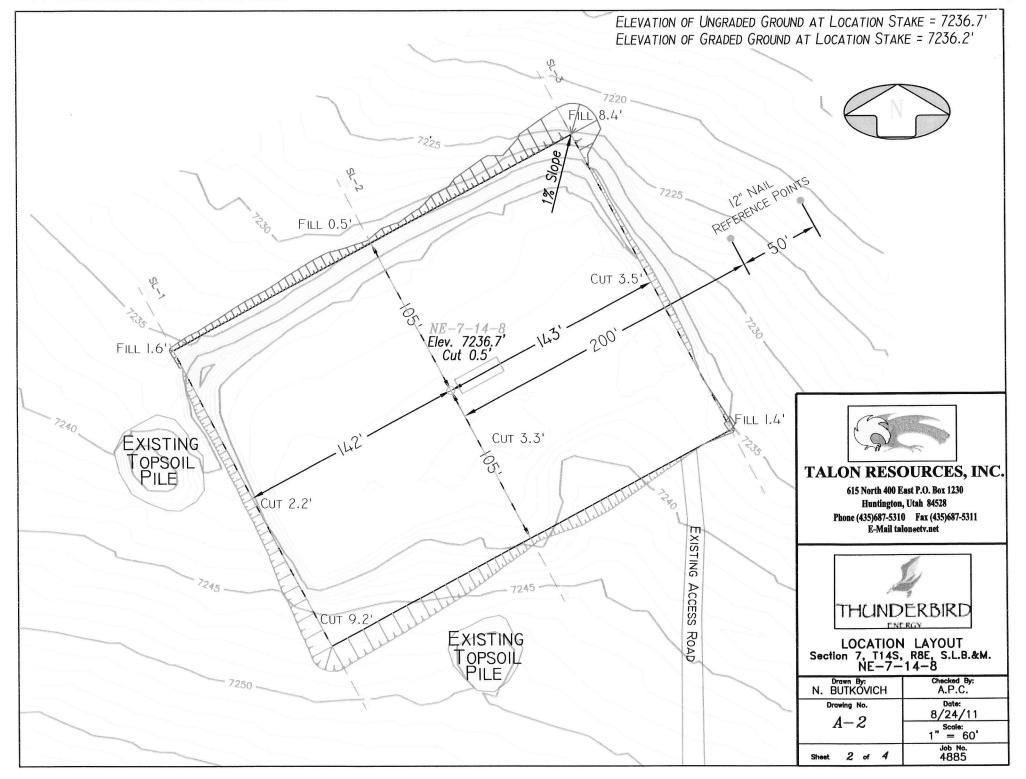
Barry Brumwell, C.E.T.

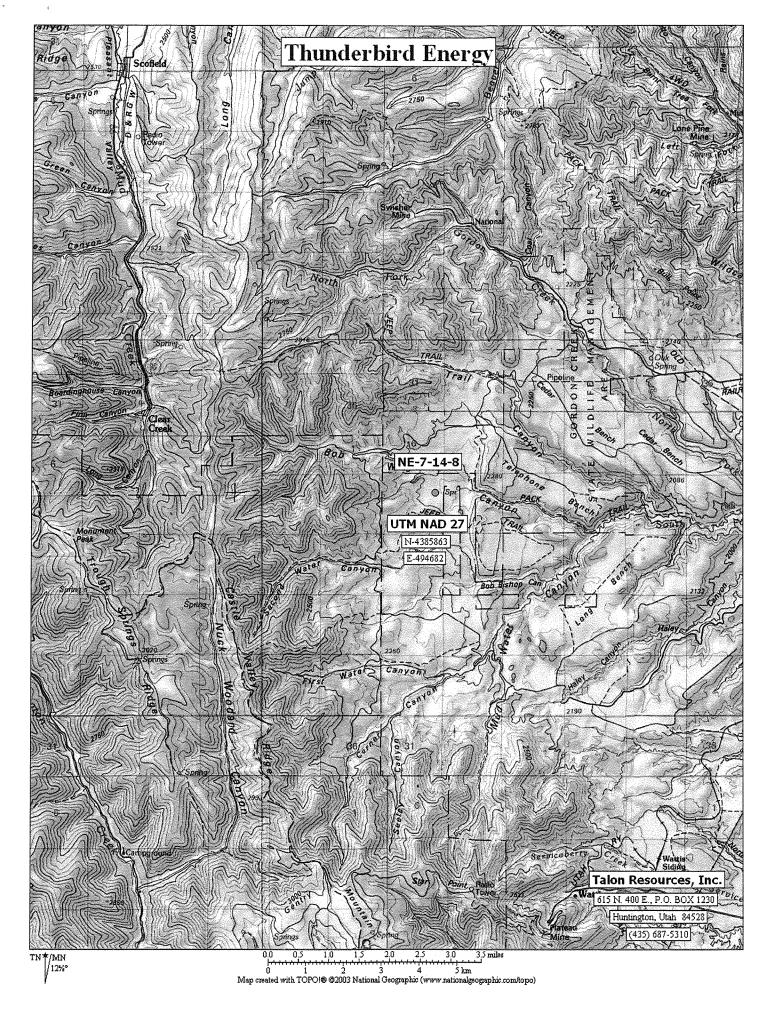
Vice President, Operations

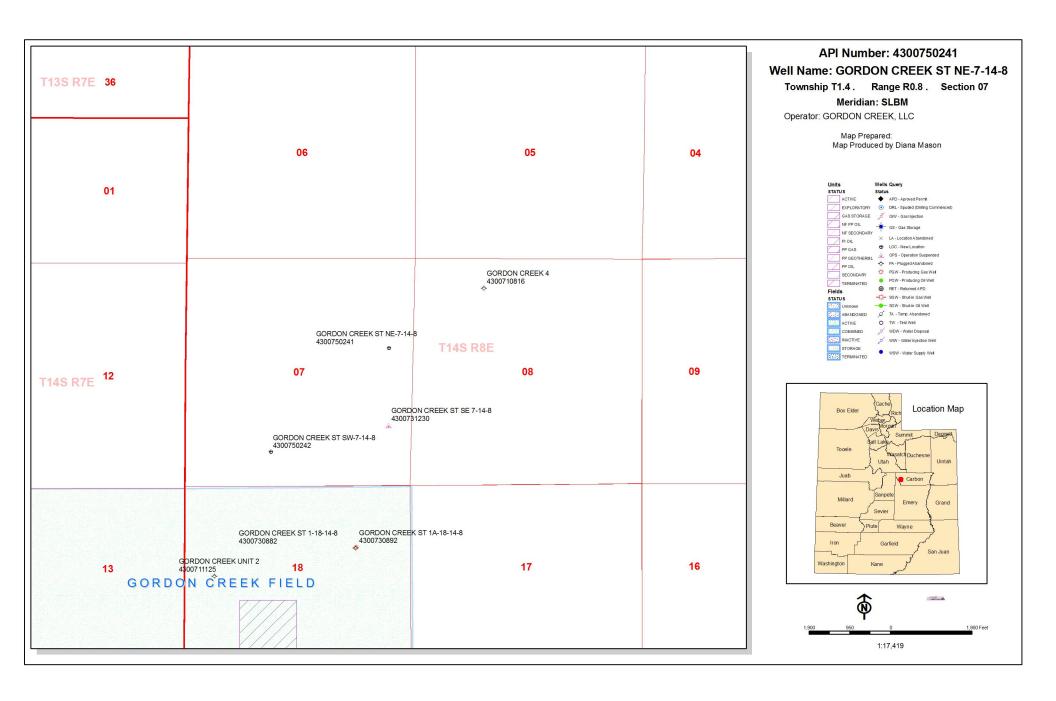
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Gordon Creek LLC. / Thunderbird Energy Inc.







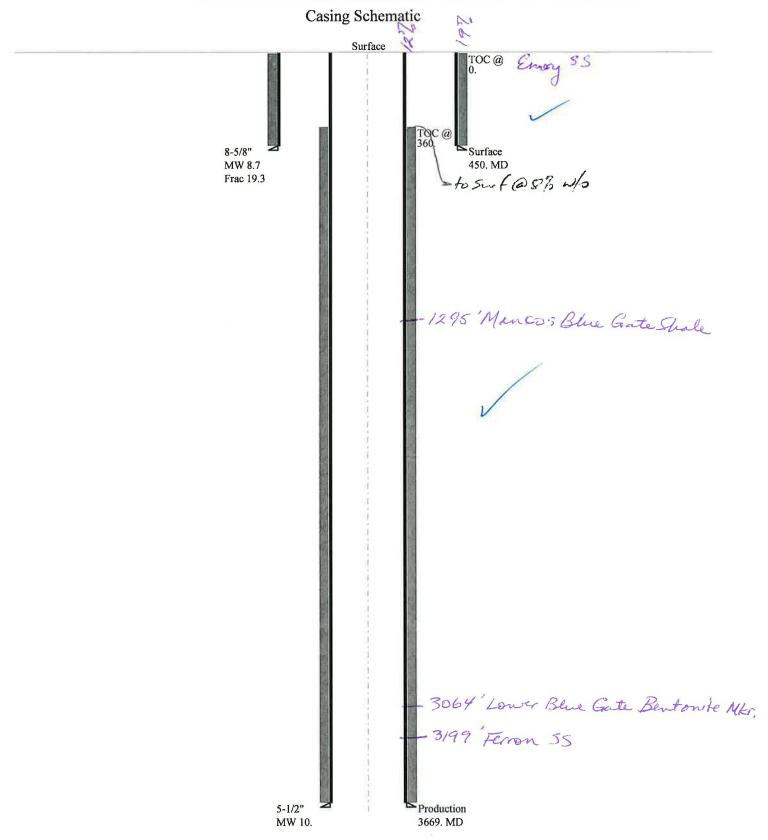


BOPE REVIEW GORDON CREEK, LLC GORDON CREEK ST NE-7-14-8 43007502410000

Well Name		CORPONIC	-			ON ODEEN OF	- NII	E 7 44 0 420d	1
String		-	i I		T	ON CREEK ST	Tr	E-7-14-8 4300	
		Surf	4	PROD	+		ł¦		
Casing Size(")		8.625	4	5.500	4		Į!		
Setting Depth (TVD)		450	4	3669		Į!			
Previous Shoe Setting Dept	th (TVD)	0	Ц	450		Ţ			
Max Mud Weight (ppg)		8.7		10.0					
BOPE Proposed (psi)		500		3000	l				
Casing Internal Yield (psi)		2950	Ì	7740					
Operators Max Anticipated	d Pressure (psi)	1700		8.9					
Calculations	Sur	f String				8.62	25	"	
Max BHP (psi)		.052*Set	ttin	ng Depth*M	W	204	I		
								BOPE Ad	equate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max	x BHP-(0.12	2*5	Setting Dept	h)=	150		YES	air drill
MASP (Gas/Mud) (psi)	Max	x BHP-(0.22	2*5	Setting Dept	h)=	105	Ī	YES	ок
								*Can Full	Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP22*(Setting D	epth - Previ	ou	s Shoe Dept	h):	105		NO	ок
Required Casing/BOPE Te	est Pressure=					450	Ī	psi	
*Max Pressure Allowed @	Previous Casing Shoe=					0	Ĩ	psi *Ass	numes 1psi/ft frac gradient
Calculations	PRO	D String				5.50)0	<u>"</u>	
Max BHP (psi)		.052*Set	ttin	ng Depth*M	W	1908	_		
								BOPE Ad	equate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max	x BHP-(0.12	2*5	Setting Dept	h)=	1468]	YES	air drill
MASP (Gas/Mud) (psi)	Max	ax BHP-(0.22*Setting Depth)=			1101		YES	ОК	
								*Can Full	Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP22*(Setting D	epth - Previ	ou	s Shoe Dept	h):	1200	Ī	NO	Reasonable
Required Casing/BOPE Te	est Pressure=					3000	Ī	psi	
*Max Pressure Allowed @	Previous Casing Shoe=					450	Ī	psi *Ass	umes 1psi/ft frac gradient
Calculations	S	tring					_	, ,	
Max BHP (psi)			tin	ng Depth*M	W		=		
Max DIII (psi)		.032 500		ig Beput in		- L	4	ROPE Ad	equate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max	x BHP-(0.12	2*5	Setting Dept	h):	_	=	-	equate 101 Dinning And Setting Casing at Depth.
MASP (Gas/Mud) (psi)				Setting Dept	_	-	#	NO	1
MANI (Gas/Miuu) (psi)	ivia	. DIH -(0.22		Jenng Dept	<u></u>	-	_	*Can Full	Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP- 22*(Setting D	enth - Pressi	رن	s Shoe Dent	h)-	1	7	_	Expected 1 resource De Heiu At Frevious 5110e:
		-pm - 1 16VI	<i></i>	5 5Hoc Dept)	-	4	NO noi	
Required Casing/BOPE Te						1	_	psi	1 1/0 6
^Max Pressure Allowed @	Pressure Allowed @ Previous Casing Shoe=				_	psi *Ass	sumes 1psi/ft frac gradient		
Calculations	S	tring						"	
Max BHP (psi)		.052*Set	ttin	ng Depth*M	W				
								BOPE Ad	equate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max	x BHP-(0.12	2*5	Setting Dept	h)		j	NO	
MASP (Gas/Mud) (psi)	Max	x BHP-(0.22	2*5	Setting Dept	h)-		Ī	NO	
								*Can Full	Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP22*(Setting D	epth - Previ	ou	s Shoe Dept	h):		ī	NO	
Required Casing/BOPE Te	est Pressure=					Ť	Ŧ	psi	
Acquired Casing DOLD Test I tessuite					_				

*Max Pressure Allowed @ Previous Casing Shoe= psi *Assumes 1psi/ft frac gradient

43007502410000 GORDON CREEK ST NE-7-14-8



Well name:

43007502410000 GORDON CREEK ST NE-7-14-8

Operator:

GORDON CREEK, LLC

String type:

Surface

Project ID:

43-007-50241

Location:

CARBON

COUNTY

Minimum design factors: **Environment:**

Collapse

Mud weight:

Design parameters:

8.700 ppg Design is based on evacuated pipe.

Collapse:

Design factor

1.125

H2S considered? Surface temperature:

No 74 °F Bottom hole temperature: 80 °F

Temperature gradient:

1.40 °F/100ft

Minimum section length:

450 ft

Burst: Design factor

1.00

1.80 (J)

1.80 (J)

1.60 (J)

391 ft

Cement top:

Surface

Burst

Max anticipated surface

No backup mud specified.

pressure: Internal gradient: Calculated BHP

1,466 psi 0.120 psi/ft

1,520 psi

Tension: 8 Round STC:

8 Round LTC: Buttress: Premium:

Body yield:

Neutral point:

1.50 (J) 1.60 (B) Tension is based on air weight.

Non-directional string.

Re subsequent strings:

Next setting depth: Next mud weight: Next setting BHP:

3,669 ft 10.000 ppg 1,906 psi

Fracture mud wt: Fracture depth: Injection pressure: 19.250 ppg 3,669 ft 3,669 psi

Run	Segment		Nominal		End	True Vert	Measured	Drift	Est.
Seq	Length	Size	Weight	Grade	Finish	Depth	Depth	Diameter	Cost
	(ft)	(in)	(lbs/ft)			(ft)	(ft)	(in)	(\$)
1	450	8.625	24.00	J-55	ST&C	450	450	7.972	2317
Run	Collapse	Collapse	Collapse	Burst	Burst	Burst	Tension	Tension	Tension
Seq	Load	Strength	Design	Load	Strength	Design	Load	Strength	Design
500 E150 E	(psi)	(psi)	Factor	(psi)	(psi)	Factor	(kips)	(kips)	Factor
1	** /			\• /	** *				22.59 J
1	203	1370	6.736	1520	2950	1.94	10.8		244

Prepared by: Helen Sadik-Macdonald

Div of Oil, Gas & Mining

Phone: 801 538-5357 FAX: 801-359-3940

Date: October 5,2011 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 450 ft, a mud weight of 8.7 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:

43007502410000 GORDON CREEK ST NE-7-14-8

Operator:

GORDON CREEK, LLC

String type:

Production

Project ID:

Location:

CARBON

43-007-50241

COUNTY

Minimum design factors: **Environment:**

1.00

1.80 (J)

1.80 (J)

1.60 (J)

1.50 (J)

1.60 (B)

Collapse

Mud weight: 10.000 ppg Design is based on evacuated pipe.

Collapse:

Design factor 1.125

H2S considered? No 74 °F Surface temperature: Bottom hole temperature:

Temperature gradient:

125 °F 1.40 °F/100ft

Minimum section length:

100 ft

Burst:

Design factor

Cement top:

360 ft

Burst

Max anticipated surface

pressure: Internal gradient: Calculated BHP

Design parameters:

1,099 psi 0.220 psi/ft

1,906 psi

No backup mud specified.

Premium: Body yield:

Tension:

Buttress:

8 Round STC:

8 Round LTC:

Tension is based on air weight. Neutral point: 3,113 ft Non-directional string.

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (Ibs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	3669	5.5	17.00	N-80	LT&C	3669	3669	4.767	20680
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	1906	6290	3.300	1906	7740	4.06	62.4	348	5.58 J

Prepared

Helen Sadik-Macdonald

by: Div of Oil, Gas & Mining Phone: 801 538-5357

FAX: 801-359-3940

Date: October 5,2011 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 3669 ft, a mud weight of 10 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

ON-SITE PREDRILL EVALUATION

Utah Division of Oil, Gas and Mining

Operator GORDON CREEK, LLC

Well Name GORDON CREEK ST NE-7-14-8

API Number 43007502410000 APD No 4661 Field/Unit UNDESIGNATED

Location: 1/4,1/4 SENE Sec 7 Tw 14.0S Rng 8.0E 2081 FNL 543 FEL

GPS Coord (UTM) Surface Owner State of Utah Division of Wildlife Resources

Participants

M. Jones (UDOGM), Barry Brumwell, Steve Lessar (Tbird), A. Childs, E. Bonner (SITLA), N. Nielson (DWR).

Regional/Local Setting & Topography

This proposed new wellbore is planned on previously disturbed surface. The site is in the upper Gordon Creek area of Carbon County, Utah. Topography changes dramatically in the area. The exact location of the well pad is sloped to the north. A well pad was originally permitted at this site and has had the permitted recinded due to inactivity. The surface has since changed ownership from SITLA to DWR. This posses issues to surface use agreements. Thunderbird and DWR are currently in negotiations in regards to surface use agreements. An ammendment to the surface use agreement that SITLA had is being drafted and hoped to have signitures in place by the end of this week to the first of next week. Both parties are in cooperation at this point. The pad is constructed and there are no plans to disturb the surface beyond the existing disturbances. Pits were reclaimed awhile back and at this point a central pit for multiple wells is planned at a different location from this pad. The cuttings will be contained on this location inside portable metal tanks. The cuttings will be trucked from the tanks to the central pit for more permanent storage and disposal. Drainages should be diverted and maintained. Berms should be maintained to contain spills on location.

Surface Use Plan

Current Surface Use

Wildlfe Habitat Existing Well Pad

New Road Well Pad Src Const Material Surface Formation

Miles Street and Stree

0 Width 210 Length 285 Onsite

Ancillary Facilities

Waste Management Plan Adequate?

Environmental Parameters

Affected Floodplains and/or Wetlands N

Flora / Fauna

existing pad. Surrounding area is dominated by sagebrush, grasses, and buckbrush.

Soil Type and Characteristics

clay loam.

Erosion Issues N

Sedimentation Issues N

10/25/2011 Page 1

Site Stability Issues N

Drainage Diverson Required? Y

Divert drainages around and away from well pad and access road.

Berm Required? Y

berm location to prevent spills from leaving location.

Erosion Sedimentation Control Required? N

Paleo Survey Run? Y Paleo Potental Observed? N Cultural Survey Run? Y Cultural Resources? N

Reserve Pit

Site-Specific Factors	Site Ra	nking	
Distance to Groundwater (feet)	100 to 200	5	
Distance to Surface Water (feet)	>1000	0	
Dist. Nearest Municipal Well (ft)	>5280	0	
Distance to Other Wells (feet)	>1320	0	
Native Soil Type	Mod permeability	10	
Fluid Type	Fresh Water	5	
Drill Cuttings	Normal Rock	0	
Annual Precipitation (inches)	10 to 20	5	
Affected Populations			
Presence Nearby Utility Conduits	Not Present	0	
	Final Score	25	1 Sensitivity Level

Characteristics / Requirements

Plans to use metal flat tanks for cuttings. No earthen pit planned at this point outside of a small blooie pit.

Closed Loop Mud Required? N Liner Required? Y Liner Thickness 16 Pit Underlayment Required? N

Other Observations / Comments

Evaluator	Date / Time
Mark Jones	10/17/2011

10/25/2011 Page 2

Application for Permit to Drill Statement of Basis

10/25/2011 Utah Division of Oil, Gas and Mining

Page 1

APD NoAPI WellNoStatusWell TypeSurf OwnerCBM466143007502410000LOCKEDGWSNo

Operator GORDON CREEK, LLC Surface Owner-APD State of Utah Division of Wildlife

Resources

Well Name GORDON CREEK ST NE-7-14-8 Unit

Field UNDESIGNATED Type of Work DRILL

Location SENE 7 14S 8E S 2081 FNL 543 FEL GPS Coord (UTM) 494665E 4385841N

Geologic Statement of Basis

Tunderbird Energy proposes to drill the well to a total depth of 3,669' and plans to set surface casing from 0'-450'. The surface string will be drilled using air unless hole conditons require the need to "mud up" with water and gel chem. Within a 10,000 foot radius of the center of section 7, there are 71 filed water rights, however, only one is a subsurface groundwater right. Gordon Creek, LLC, has applied for a 4 acre/foot well for oil & gas field operations. This location is within a small north-south trending graben valley. The poorly permeable silty soil has been formed from the erosion of the Upper Blue Gate Member of the Mancos Shale. Several units of the Emery Sandstone Member of the Mancos Shale are present at the near surface or within the subsurface, these strata should be included within the interval to be protected by the surface casing string. The operator should be informed of the likelihood of these units being water saturated and to respond to protecting these zones by extending the surface casing as necessary. Proposed surface casing and cement should adequately isolate any shallow zones containing water.

Ammon McDonald
APD Evaluator
Date / Time

Surface Statement of Basis

This proposed new wellbore is planned on previously disturbed surface. The site is in the upper Gordon Creek area of Carbon County, Utah. Topography changes dramatically in the area. The exact location of the well pad is sloped to the north. A well pad was originally permitted at this site and has had the permitted recinded due to inactivity. The surface has since changed ownership from SITLA to DWR. This posses issues to surface use agreements. Thunderbird and DWR are currently in negotiations in regards to surface use agreements. An ammendment to the surface use agreement that SITLA had is being drafted and hoped to have signitures in place by the end of this week to the first of next week. Both parties are in cooperation at this point. The pad is constructed and there are no plans to disturb the surface beyond the existing disturbances. Pits were reclaimed awhile back and at this point a central pit for multiple wells is planned at a different location from this pad. The cuttings will be contained on this location inside portable metal tanks. The cuttings will be trucked from the tanks to the central pit for more permanent storage and disposal. Drainages should be diverted and maintained. Berms should be maintained to contain spills on location.

Mark Jones 10/17/2011
Onsite Evaluator Date / Time

Conditions of Approval / Application for Permit to Drill

Category Condition

Surface Operations should be contained to existing access and existing well pad. Activities beyond these boundaries are not

permitted.

Surface The well site shall be bermed to prevent fluids from leaving the pad.

Surface Drainages adjacent to the proposed pad shall be diverted around the location.

RECEIVED: October 25, 2011

WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 9/19/2011 **API NO. ASSIGNED:** 43007502410000

WELL NAME: GORDON CREEK ST NE-7-14-8

OPERATOR: GORDON CREEK, LLC (N3245) **PHONE NUMBER:** 403 453-1608

CONTACT: Barry Brumwell

PROPOSED LOCATION: SENE 07 140S 080E Permit Tech Review:

SURFACE: 2081 FNL 0543 FEL Engineering Review:

BOTTOM: 2081 FNL 0543 FEL Geology Review: 📝

COUNTY: CARBON

LATITUDE: 39.62420 LONGITUDE: -111.06216

EASTINGS: 494665.00 NORTHINGS: 4385841.00

UTM SURF EASTINGS: 494665.00
FIELD NAME: UNDESIGNATED

LEASE TYPE: 3 - State

LEASE NUMBER: 46537 PROPOSED PRODUCING FORMATION(S): FERRON SANDSTONE

SURFACE OWNER: 3 - State COALBED METHANE: NO

RECEIVED AND/OR REVIEWED: LOCATION AND SITING:

Bond: STATE - RLB0010790 Unit:

Potash R649-3-2. General

Oil Shale 190-3 R649-3-3. Exception

Oil Shale 190-13

✓ Water Permit: 91-5193 Board Cause No: Cause 248-01

RDCC Review: Effective Date: 5/16/2002

Fee Surface Agreement Siting: 460' Fr Outer Bdry & 920' Fr Other Wells

Intent to Commingle R649-3-11. Directional Drill

Commingling Approved

Oil Shale 190-5

Comments: Presite Completed SURF OWNER DWR:

Stipulations: 5 - Statement of Basis - bhill

API Well No: 43007502410000



State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

Permit To Drill

Well Name: GORDON CREEK ST NE-7-14-8

API Well Number: 43007502410000

Lease Number: 46537 Surface Owner: STATE Approval Date: 10/25/2011

Issued to:

GORDON CREEK, LLC, 1179 E Main #345, Price, UT 84501

Authority:

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 248-01. The expected producing formation or pool is the FERRON SANDSTONE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

Duration:

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

Conditions of Approval:

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Additional Approvals:

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan contact Dustin Doucet
- Significant plug back of the well contact Dustin Doucet
- Plug and abandonment of the well contact Dustin Doucet

Notification Requirements:

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

• Within 24 hours following the spudding of the well – contact Carol Daniels OR

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at http://oilgas.ogm.utah.gov

API Well No: 43007502410000

- 24 hours prior to testing blowout prevention equipment contact Dan Jarvis
- 24 hours prior to cementing or testing casing contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well contact Dan Jarvis

Contact Information:

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 office
- Dustin Doucet 801-538-5281 office

801-733-0983 - after office hours

• Dan Jarvis 801-538-5338 - office

801-231-8956 - after office hours

Reporting Requirements:

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) due prior to implementation
- Written Notice of Emergency Changes (Form 9) due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
- Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

Approved By:

For John Rogers Associate Director, Oil & Gas

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Cor	mpany;	GORDON	N CREEK, LI	LC		
Well Name	:	GORDO	N CREEK ST	NE 7-14-8	.	
Api No <u>:</u>	43-007-502	41	Lease Type	STA	ATE	
Section 07	Township_	14S Rai	nge <u>08E</u>	_County	CARBON	-
Drilling Cor	ntractor	TRIPLE A	DRILLING	R	IG#	
SPUDDE	D: Date	01/12/2012	·			
	Time	9:30 AM				
	How	DRY				
Drilling wi	ill :e:					
Reported by		BOZE	STINSON			
Telephone #		(435)	630-6394			
Date	01/12 /2012	Signed	CHD			<u></u>

Sundry Number: 33072 API Well Number: 43007502410000

			FORM
	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	3	5.LEASE DESIGNATION AND SERIAL NUMBER: ML-46537
SUNDR	WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
	posals to drill new wells, significantly deep reenter plugged wells, or to drill horizontal n for such proposals.		7.UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: GORDON CREEK ST NE-7-14-8
2. NAME OF OPERATOR: GORDON CREEK, LLC			9. API NUMBER: 43007502410000
3. ADDRESS OF OPERATOR: 1179 E Main #345, Price,		NE NUMBER: Ext	9. FIELD and POOL or WILDCAT: UNDESIGNATED
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2081 FNL 0543 FEL			COUNTY: CARBON
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: SENE Section: 0	HIP, RANGE, MERIDIAN: 7 Township: 14.0S Range: 08.0E Meridian: \$	8	STATE: UTAH
11. CHEC	K APPROPRIATE BOXES TO INDICATE N	ATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
4/30/2013	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
Date of Work Completion:		PLUG AND ABANDON	PLUG BACK
SPUD REPORT		RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	LI TEMPORARY ABANDON
	L TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
	WILDCAT WELL DETERMINATION	OTHER	OTHER:
12. DESCRIBE PROPOSED OR	COMPLETED OPERATIONS. Clearly show all pe	rtinent details including dates, c	lepths, volumes, etc.
1	expired and we still wish to drill		Approved by the
therefore	requesting a 1-year extension t	o the APD.	Utah Division of Oil, Gas and Mining
			April 19 Continues, Section 19 Continues
			Date: December 18, 2012
			By: Bacylll
NAME (PLEASE PRINT)	PHONE NUMBER	TITLE	
Barry Brumwell	403 453-1608	Vice President-Operations	
SIGNATURE N/A		DATE 12/13/2012	

Sundry Number: 33072 API Well Number: 43007502410000



The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43007502410000

API: 43007502410000

Well Name: GORDON CREEK ST NE-7-14-8

Location: 2081 FNL 0543 FEL QTR SENE SEC 07 TWNP 140S RNG 080E MER S

Company Permit Issued to: GORDON CREEK, LLC

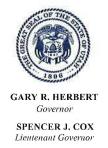
Date Original Permit Issued: 10/25/2011

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

• If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes No
 Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes No
• Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes No
 Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location? Yes No
• Has the approved source of water for drilling changed? Yes No
 Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes No
• Is bonding still in place, which covers this proposed well? Yes No
B 4 4040/0040

Signature: Barry Brumwell Date: 12/13/2012

Title: Vice President-Operations Representing: GORDON CREEK, LLC



State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R, STYLER

Executive Director

Division of Oil, Gas and Mining

January 8, 2014

JOHN R. BAZA
Division Director

Gordon Creek, LLC 1179 E Main #345 Price, UT 84501

Re:

APD Rescinded - Gordon Creek ST NE-7-14-8, Sec. 7 T.14S, R.8E,

Carbon County, Utah API No. 43-007-50241

Ladies and Gentlemen:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on October 25, 2011. On December 18, 2012, the Division granted a one-year APD extension. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective January 8, 2014.

A new APD must be filed with this office for approval <u>prior</u> to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

Diana Mason

Environmental Scientist

Whism

cc: Well File

SITLA, Ed Bonner

